

62.09

DUPLICATE

NEW. THE VERY BEST. TRUE TO NAME.

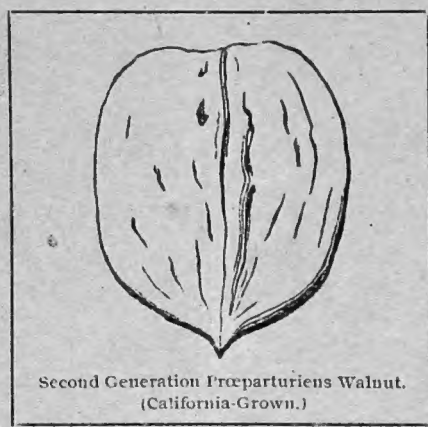
BARREN HILL NURSERIES.

Illustrated Descriptive Catalogue

AND PRICE LIST OF

Nuts, Prunes and Fruit Trees,

GRAPEVINES, SMALL FRUIT, ETC.



Followed by an Essay on "Grafting the Walnut" illustrated with eight cuts representing Walnut Blossoms, Cions and Stock; all of natural size.

TREES AND PLANTS BY MAIL A SPECIALTY.

FELIX GILLET, PROPRIETOR,

NEVADA CITY,

1888-89.

CALIFORNIA.

Entered according to Act of Congress in the year 1888, in the Office of the Librarian of Congress, at Washington, by FELIX GILLET

CAUTION!

We would caution our patrons against buying from agents purporting to be ours, as we have no agents whatever throughout the State for the sale of our valuable kinds of Nut and Fruit Trees, such as "Second Generation" Præparturiens, Cluster and other rare sorts of Walnuts, Chestnuts, Prunes and other Fruits. Also beware of fraud, and don't you get common and worthless kinds of English Walnuts for Præparturiens, Cluster and other choice sorts introduced by us into California and the United States; also common varieties of Prunes for such as we advertise.

TERMS.

Our terms are invariably cash (and we intend to stick to that rule, not having a stock large enough to warrant us in making credits for any amounts to anybody). Remittances may be made, according to the amount of orders, by Express or Postal Money Orders, Registered Letters, Bank Drafts and Express. Very small amounts (50 cents to \$1.00) can be sent in postage stamps of two and five cents.

"BARREN HILL."

Much surprise has been manifested by a great many people at the strange and plain name given to our popular and well-known nurseries, "BARREN HILL" The fine system of roots and healthfulness of all trees and plants, as grown upon our so-called "Barren Hill," have intensified still more deeply the surprise of all, and well could they exclaim: "What's in a name!" Well, we couldn't help it if our place, before we made of it the beautiful spot that it is to-day, and one of the best cultivated pieces of land in Northern California, was nothing but a rough, barren, dismal-looking place, sprinkled all over with a bountiful supply of Pine and Cedar stumps, and huge boulders and rocks, and with only six to eight inches of rather poor soil on the top of hard, yellow clay, mixed, here and there, with disintegrated granite, from all of which the hill derived its "realistic" if not poetical name of "Barren." We couldn't help it, neither, if of necessity we had to settle upon this dismal-looking place rather than look around for better land that we had been unable to purchase; and well may we say to-day that we are proud of this barren hill of ours. Our experiment has demonstrated, too, what industry and perseverance may accomplish on some of the poorest mountain land of our great State. "Thorough cultivation" of the soil is the whole secret of our success; and from the fact that our trees owe their splendid system of roots, vitality and healthfulness to "thorough culture," and not to rich moist soil, or well manured ground and intensive irrigation, is another guarantee given our patrons, either from a warm or cold climate, with poor or rich ground, as to the successful transplanting of such trees to their respective parts of the country.

Our trees, besides being well provided with a fine system of roots—and good roots imply good health—are entirely *free of insect pests*, scales, spiders and Phylloxera being unknown at Barren Hill's altitude—2,600 feet above the level of the sea.

Our rooted grape cuttings are from cuttings planted *upright* in small ditches, 18 to 24 inches apart, and have, therefore, the whole system of roots right at the butts, where it should always be.

PLATE I.

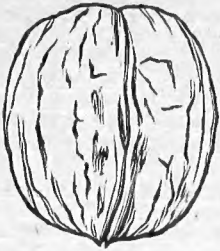


Fig. 1.

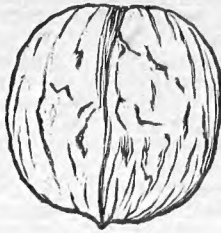


Fig. 2.



Fig. 3.

Original or First Generation Præparturiens.

(Figures 1, 2, 3.)

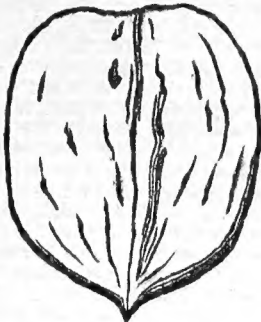


Fig. 4.

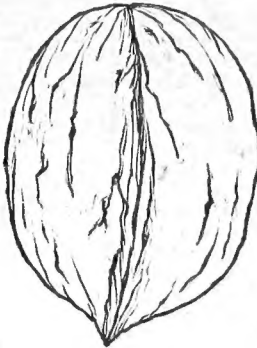


Fig. 5.

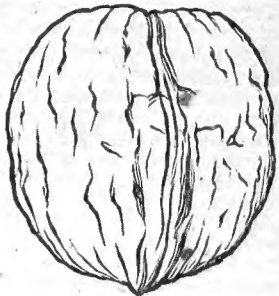


Fig. 6.

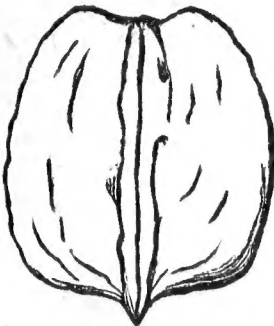


Fig. 7.

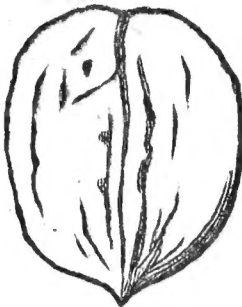


Fig. 8.

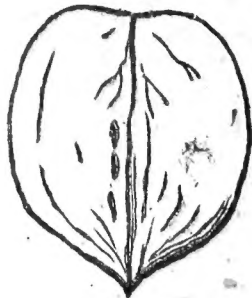


Fig. 9.

Second Generation Præparturiens.

(Figures 4, 5, 6, 7, 8, 9.)

Franquette.—Originated eighty years ago in France by a man named Franquet. It is, with Parisienne and Mayette, the finest dessert and market nut known in Europe. It is exceedingly large, an elongated oval, and full-fleshed; it blooms also very late in the spring; highly recommended for the size and beauty of the nut. (See fig. 16.)

Chaberte Walnut.—An old and most valuable variety; late in budding out. The nut is well shaped and of fair size, the kernel of extra fine quality; very productive. The Chaberte was originated a century ago by a man named Chabert, hence its name; it is very rich in oil, and is cultivated on a large scale in the east of France, where nut raising is one of the leading industries of the country. (See fig. 34.)

Mesange, or Tit-Lark Walnut.—This nut has the thinnest shell of any variety known; it derives its name of *Mésange* from a little lark of that name, that goes to the kernel through the tender and thin shell. Very productive, and quite rich in oil. One of the best to be eaten *fresh* or pickled.

Serotina or Late Walnut.—This variety is most valuable where late frosts are common, on account of its lateness in budding out. The nut is of medium size, well shaped; the meat very sweet and highly flavored; one of the best nuts so far grown in our grounds. Very prolific. It is this variety that produces the "After Saint John" Walnut; nurserymen marking out every Serotina in nursery row that puts forth about St. John's Day, and selling such trees under the name of After Saint John Walnut. It reproduces well enough from the seed.

Gant or Bijou Walnut.—A remarkable variety for the extraordinary size of its fruit. The shell is thin, with rather deep furrows; those of the largest size being made into ladies' companions, where to stow away gloves or handkerchief; hence the name "Gant" Walnut. The kernel, though, does not correspond to the size of the shell.

Parisienne.—This beautiful nut, one of the finest for dessert and market, was originated in the southeast of France, and not in the neighborhood of Paris, as its name would imply. The nut is large, broad of a very pretty shape; it is quite late in budding out, blooming at the altitude of Nevada City, like the Mayette, about the first of June. We never had Parisienne, Mayette and Franquette injured by frost in the spring, and we regard them as perfectly hardy. (See fig. 13.)

Barthere Walnut.—A singularly-shaped nut, elongated, broad at the center and tapering at both ends; the shell is harder than that of other sorts. Entirely reproduced by grafting.

Meylan Walnut.—A new and most beautiful variety, looking much like the Mayette, and originated near the little village of Meylan, in the east of France. Much cultivated for exportation to the north of Europe.

Vourey Walnut.—Another new and splendid variety, first originated near Vourey, a small town in the southeast of France. It has much the shape and superior quality of the Parisienne.

Weeping Walnut.—Still another new and valuable variety; it derived its name from its branches drooping down under the weight of the nuts, we presume, like a weeping willow. Propagated by grafting.

Vilmorin, or Pear-shaped Walnut.—A cross between the English and Black Walnut; the nut has the shape of the English Walnut, or rather that of the Serotina, and the shell the appearance and hardness of the Black Walnut. Propagated by grafting. A very curious nut, but not desirable for market.

Third Generation Prœparturiens, or Common French Walnut (*Juglans Regia*). Having grown and fruited third and fourth generation Prœparturiens the last ten to twelve years, we had to come to the conclusion that from the third generation the Prœparturiens loses the characteristics of the original, and goes back to the mother type, or *Juglans Regia*. We cannot, therefore, advertise such trees as true Prœparturiens, though grown from nuts borne on genuine trees of the second generation, but simply as common French walnuts. This kind is a rapid and vigorous grower, one of the best for break-winds. It bears the same kind of nut as the imported article found in fruit stores. The nut is smaller than that of the second generation, but, like the latter, it is full-fleshed, very sweet, and the shell quite thin. (See figs. 10, 11, 12.)

All the trees that we have scattered throughout the State, and outside of it, the last ten years, under the name of Prœparturiens, were "second generation" trees—trees grown from nuts borne on such trees are consequently nothing else but third generation Prœparturiens, or common French walnuts. So is it the case with trees grown from nuts borne on trees grafted from our second generation stock. We have been unable ourselves to obtain grafted trees from the original Prœparturiens, whose nuts only produce second generation trees. Hence the reason why second generation Prœparturiens are so scarce.

The Prœparturiens, Cluster, Serotina, Mayette, Franquette, Barthère, Mésange, Gant, Parisienne, Chaberte, were all introduced by us into this country from Europe the last seventeen years; the Vourey, Meylan, Vilmorin, Weeping Walnut, but recently.

PLATE II.



Fig. 10.



Fig. 11.

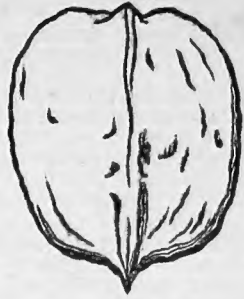


Fig. 12.

Third Generation Præparturiens.

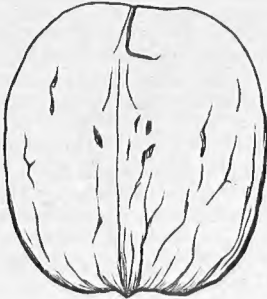


Fig. 13.
PARISIENNE.

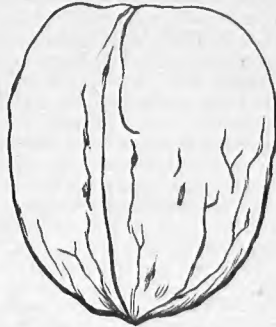


Fig. 14.
MAYETTE.



Fig. 15.
GROSSE TENDEE ALMOND.

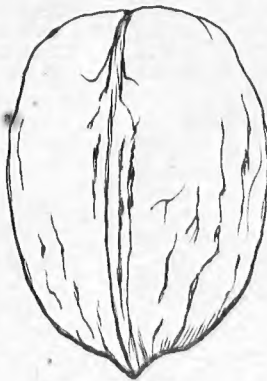


Fig. 16.
FRANQUETTE.

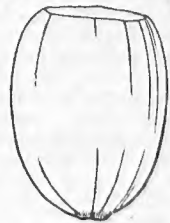


Fig. 17.
DuChilly FILBERT.

All the Nuts on this Plate, except Mayette, "California Grown."

(Copyrighted.)

LATEST IMPORTATIONS.

(All propagated by grafting.)

Poorman Walnut.
 Monophylla Walnut.
 Ash-Leaved Walnut.

AMERICAN WALNUTS.

Butternut.—This kind is indigenous to the United States, and well known throughout the New England, Middle and Western States. The fruit is elongated; the nut hard and rough, with prominent ridges; the kernel pleasant flavored and oily, whence the name butternut.

Pecan Nut.—This variety is found in the valley of the Mississippi and its tributaries. The tree is beautiful, with a straight and well-shaped trunk. The nut is oblong and smooth, and the kernel sweet and highly flavored.

Hickory Nut—(Shell Bark).—The hickory grows tall and slender, with rough and shaggy bark. The wood is much used in making hoops, whip-stalks, axe-handles, etc.; the fruit contains a thin-shelled, richly-flavored kernel.

California Black Walnut.—This species of walnut is indigenous to California. The fruit is spherical, the nut hard but smooth, and not furrowed like the Eastern Black Walnut; the kernel is rich and oily. This walnut is of rapid growth, spreading out more than the Eastern kind, but going to bearing sooner.

GRAFTED WALNUTS.

The finest collection of the rarest and most valuable varieties to be found in the United States.

We offer to our customers this season grafted trees (grafted from the *original* stock) of the following varieties: Mayette, Parisienne, Franquette, Chaberte, Vourey, Meylan, and a few Cluster, Weeping, Gant, Large and Late Proparturiens, at from \$1.50 to \$2.50 per tree, according to kinds and sizes.

The difficulty in grafting the Walnut is such that we have to keep up the prices of this class of trees at such high figures; it explains, also, the scarcity of "grafted" trees. Our place is, we believe, the only one in the United States where Grafted Walnuts can be obtained.

(See accompanying essay on Walnut Grafting.)

CHESTNUTS.

MARRONS, OR FRENCH CHESTNUTS (solely propagated by grafting).

Marron De Lyon.—Fruit large, round-

ish, sweet and well flavored, the peliole of the kernel coming off freely from the rather smooth surface. Does not seem to do as well in California, as far as bearing qualities are concerned, as it does in Europe.

Marron Merle.—Nut very large; first quality; very productive; a very desirable kind.

Early Marron—(Avant Chataigne).—This is one of the earliest chestnuts to ripen; and wherever the summer is short, or not warm enough to ripen the other sorts, this kind should be planted in preference. The nut is large, very sweet, and well flavored.

Marron Grosse Precoce.—As its name shows, it is a large Marron and quite early; like the above kind, it should be planted in preference to all other sorts wherever the summers are short and cold.

Yellow Marron.—(Jaune d'œuf)—This is a very curious sort of Marron; when baked or boiled the meat has the color of the yellow of an egg, hence its name.

Marron Nouzillard.—A beautiful variety, extensively cultivated in central France. Nut large, very sweet; very productive.

The above varieties or Marrons have been introduced by us into this country from Europe some eighteen years ago, others more recently. We are able, therefore, to tell about their bearing qualities.

As seedling chestnuts are advertised under the name of Marrons, which they are not, here is an easy way to detect the fraud: The leaves of the Marron (propagated solely by grafting) are of a glossy, dark green, with the teeth of the edge small, while those of seedlings are of a dull green, with larger teeth on the edge, and somewhat broader. The nut of the grafted Marron is found generally single, two at the most, in each burr, and that explains the large size of the nuts; while with seedlings the nuts grow from two to six in each burr, and are consequently smaller and flattened, at least the middle one, on each side.

In quality our California-grown Marrons are not in the least inferior to the French nuts, but certainly superior to any seedling nuts grown in this State.

SEEDLING CHESTNUTS.

Marron Combale.—Nut medium large to large; two to four nuts in each burr. Productive. The same as the common Italian or Spanish chestnut, propagated from the seed and found all over the State. Very inferior to the nut of "grafted" trees, the Marron degenerating from the second generation from the seed and going back to the common type or "Chataigne."

American Chestnut.—The fruit of this variety is a great deal smaller than that of European kinds, though the kernel is very sweet and well flavored.

ALMONDS.

Princess, or Ladies' Thin Shell. The variety common in the shops of confectioners, where it is extensively used in the manufacturing of certain cakes and candies; it is also the kind most esteemed at dessert. The shell is so thin that it can be crushed between the fingers. Kernel fat, sweet and rich.

Languedoc, or Soft-Shell.—The shell of this variety, though a little harder than that of the Princess, is thin and soft, and easily cracked. The kernel is fat and very sweet. This kind is more hardy and less injured by the "gum" than the Princess.

Hard-Shell.—The common kind with a shell as hard as that of the Black Walnut.

Seedling Languedoc and Grosse Tendre.—We offer to the public this season, seedling trees of these two valuable varieties. Seedling almonds have the advantage on budded trees to be more hardy and vigorous, and less liable to be attacked by the "gum," though it is impossible to guarantee any of them to be as true as budded trees.

The Languedocs have the advantage over the Princess or Paper-Shell, and other well advertised varieties in this State, of blooming much later, being hardier, and resisting the attacks of the gum most successfully.

FILBERTS.

Red Aveline.—Fruit large, ovate; flavor sweet, pleasant and nutty; shell thin; ker-

nel smooth, and from the fact that it is invested with a very thin skin of a beautiful dark wine color, hence its name of Red Aveline. We consider this kind, which we have cultivated and fruited for the last sixteen years, as one of the most prolific and desirable kinds to cultivate in California. (See Fig. 29.)

White Aveline.—In every respect the same as the above, with the exception of the kernel being invested with a thin white skin. (See Fig. 29.)

Grosse of Piedmont.—Fruit large and round; quite productive. Very much like the sort kept in stores, and imported from Italy. (See fig. 31.)

Cluster.—A very remarkable variety, on account of the nuts always growing in clusters of two to ten. Very desirable variety.

Sicily.—Fruit large, round, sweet and nutty.

Large White of England.—A large, long, white sort, from the filbert district of England; largely cultivated for market.

Kentish Cob.—We are yet experimenting on this kind, said to be very valuable.

Du Chilly.—An entirely new variety from France, and the largest filbert we have ever fruited in California. The nut is of an elongated oval, very broad, over an inch in length and three-fourths of an inch broad. The nuts seem to be uniformly large, and the bushes quite prolific. It bore for the first time with us in the summer of 1887. (See fig. 17.)

Daviana.—A very large nut, of a fine buck color, with dark red streaks.

Weeping Filbert.—Most handsome variety; its branches drooping down gently like those of a weeping willow. (Propagated by grafting.)

All the varieties we offer in the above list are guaranteed to be "true," they being propagated from layering, a few by grafting.

We have also "seedlings" of the Aveline and Piedmont varieties, but advertise them as such at much lower prices.

The Aveline or Spanish Filberts are extensively cultivated in Spain and the south of France, where they constitute an important branch of commerce. They are exceedingly sweet and well flavored; the shell is thin, and certainly more easy to be cracked than the English sorts. Herewith we give a correct cut of the Aveline as raised in our grounds. Whenever growing in clusters of three to eight, as they often do, the nuts are not so large as when growing single or in clusters of two.

PART SECOND.

PRUNES.

It may be useless on our part to point out the importance of the Prune interest in California, and to demonstrate through figures, statistics and the like, of what vast import is to our State this infant industry, to which development such a large area of our great State is so well adapted.

So far, in California, a variety of the Prune D'Ente or D'Agen, called here, on account of its small size, "Petite Prune D'Agen," has been almost exclusively cultivated. This Petite Prune, which is exceedingly sweet and well flavored, makes an excellent prune if properly dried or cured; but some objections are made concerning its small size and, in some cases, light color, when compared to the much larger and darker product of the French. These two defects, whatever be the general qualities of that prune, are serious ones; and it was the main reason why we did advise the planting and tasting of the best known sorts cultivated in the renowned prune districts of Europe. We have ourselves, for the last three or four years, investigated in the most thorough manner this prune question, imported from the very prune districts of France the best known types of that famous prune, going there under the name of D'Ente or Robe De Sergent; and found out that our Petite Prune is a true type of the D'Ente, its botanical characters being identical, and the fruit as richly flavored and sweet as that of its French ancestor. We furthermore, ascertained that there was no such thing as a "Grosse" or "Petite" prune D'Ente or D'Agen, and that such names had been used, and wrongly so, in this State; and, finally succeeded in narrowing down this prune question to a simple question of "size," the fruit of the D'Ente in France attaining a much larger size than that of the California D'Ente, or Petite Prune. But last summer's experience (1888) has demonstrated to us beyond a doubt that we were able to grow in California as large and fine prunes as are grown in the valley of the Lot, in France, if planting the same sorts and taking care of them and pruning them in the very same manner. Undoubtedly the soil and climate have much to do regarding the size and quality of Prunes, and it cannot be reasonably expected that in certain sections of our State, as sweet [redacted] sections more favorably adapted to that class of fruit, than in other sections of our State Horticultural Society at San Francisco, or French prunes, and also St. Catherine prunes ever grown in this State, some D'Ente prunes we found out, has much to do with the size of that other renowned prune, the St. Catherine

A peculiarity with the Prune D'Ente, is [redacted] from half an ounce to almost two ounces, the [redacted] of the limbs. We herewith give three cuts of the Mont-Barbat D'Ente as grown on the same tree, to show that peculiarity of the D'Ente in growing fruit of such different sizes. (See figs. 18, 19, 20.)

Certain horticulturists in this State claim that there is but one type of the French Prune, that is the Prune D'Ente or Robe De Sergent. We say that it is not so, that there are several distinct types of that prune, which differ greatly from each other, the botanical characters of each of these varieties being far from being identical. We have in our grounds four different types of the D'Ente, viz: The D'Ente proper or Robe De Sergent (called in this State Petite or French prune); the Loire D'Ente, from the valley of that name and an inferior type; the Puymirol D'Ente, and the ——— D'Ente (a new and valuable type that we will not name for the present, and bearing large fruit.)

Two-thirds of the prune trees in the prune district of the Lot in France, are propagated "true from the root," and the other third by budding or grafting. We have introduced into this State and are propagating this type of the D'Ente, "true from the root," having given it the name of Lot D'Ente, to distinguish it from our other types. "True from the root" is what the French call "Franc De Pied" (not grafted, but the stalk and the root being only one thing), such are layers, cuttings and sprouts growing at the foot of trees themselves "true," as we find it with figs, olives, filberts, currants, and the like. The D'Ente and St. Catherine, "true from the root," are propagated in this way: Sprouts growing at the foot of old and large trees, and but few are found to each tree, are taken off and planted close together in a bed to make them root well, and the ensuing spring planted in nursery rows where they are trained like any other trees, and transplanted where to remain, when branched.

In the snow-horticultural belt of the Sierra, which extends from 1,200 to 3,000 feet

PLATE III.

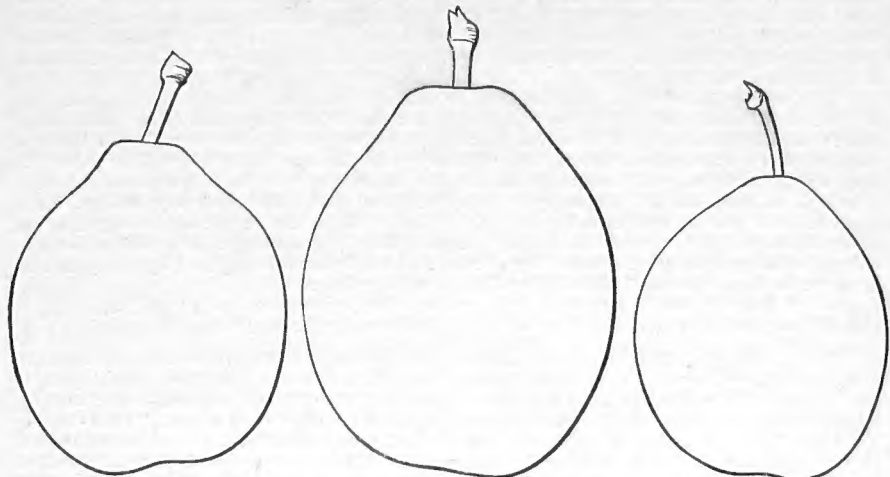


Fig. 18.

Fig. 19.

Fig. 20.

Figures 18, 19 and 20, Mont-Barbat D'Ente, borne on the same tree.

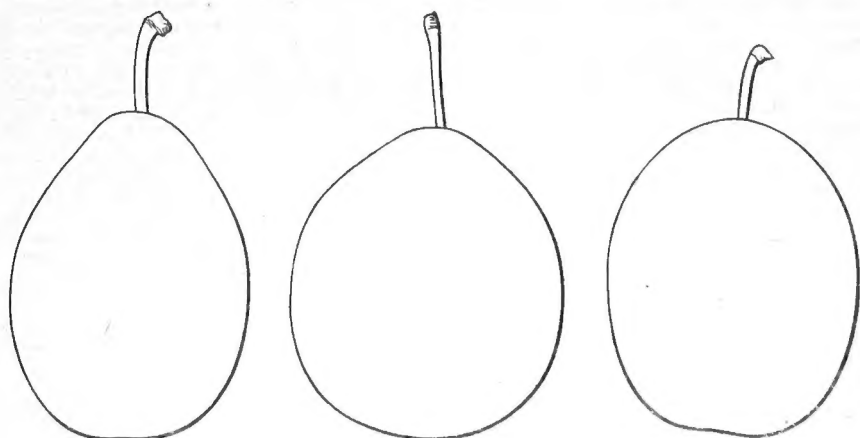


Fig. 21.
LOT D'ENTE.

Fig. 22.
ST. CATHERINE.

Fig. 23.
PUYMIROL D'ENTE.



Fig. 24.
MONT-BARBAT.



Fig. 25.
LOT.



Fig. 26.
CAL.



Fig. 27.
LOIRE.



Fig. 28.
ST. CATHERINE.

All the Prunes on this Plate "California Grown."

above the level of the sea, and comprises an immense area of territory, the prune grows splendidly like all stone-fruit trees—no trouble about that—and bears heavily, too, provided the “gum” lets it alone and spring frosts spare it—though the gum is the worst of the two. Now, since the kind “true from the root” is such an excellent gum-resistant stock, people will see at a glance that, with such a stock, prune growing might become possible and profitable in the very midst of our mountains, and where trees budded on the root do so badly.

The chief qualities and advantages of prune trees, true from the root, may be summed up as follows: To be good gum-resistant stock (the very reason why this kind is so extensively planted in its home, in France), more long-lived than trees budded on the root; very vigorous growers, and heavy and regular bearers; last, in case of an accident happening to the body of the tree, enabling the latter to grow back *true* from the root. The fruit of our Lot D'Ente, or type true from the root, compares very well with the finest French prunes grown so far in California. Still, wherever prune trees grafted on the root do well and are not attacked by the gum, they might very well be planted, everything else being equal; but where they do not, and are liable to be injured by the gum, the kind “true from the root” should, by all means, be preferred.

We will now give a description of the varieties of prunes imported, tested and propagated by us, and of which we have this season trees ready for market:

Prune D'Ente, or D'Agen, or Robe De Sergent.—This is the kind that produces the famous French Prune, shipped all over the world from Bordeaux, France, with the “United States of America” for its best and most extensive market; and it is the very variety cultivated in the great prune district of the Lot, with Agen for an entrepot. (See Figs. 18, 19, 20 and 21.)

The D'Ente is of medium to large size, in some instances quite large (see Fig. 19). The fruit is generally pear-shaped or pyriform, broad at the center and tapering towards the stem. The suture is slight, the skin thin, covered with heavy bloom; violet red. The pulp is yellow, sweet, but little flavored; juicy, though not to excess. It ripens from the latter part of August to the beginning of September. The tree is vigorous, very productive and a constant bearer. The best types of that prune are found in the valley of the Lot, in France, where that celebrated prune originated.

Mont Barbat D'Ente.—We secured this type from the orchard of that name, which means Barbat Hill, a type that obtained thirty-two first premiums for the beauty and size of its prunes, at the District Fairs of the Lot, in France. (See Figs. 18, 19 and 20, representing four samples of that fine prune as grown upon the same tree, right upon our place, in Nevada City.)

Lot D'Ente, or D'Ente—“true from the root.”—This is the type of the Prune D'Ente, the most propagated in the valley of the Lot. It is altogether propagated but true from the root, by the rooting of sprouts growing at the foot of old and large trees themselves true from the root—that is, not grafted. By grafting, only the size and quality of the fruit are retained, and its other characteristics done away with. We have beautifully rooted trees, one, two and three years in our grounds, of this valuable type, though in small quantities. The fruit is not uniformly pyriform, like that of the Mont Barbat, some of the trees bear-

ing fruit of a more oval shape (see Figs. 18 and 21). This is the type which, propagated “true from the root,” and not by grafting, proves such a good “gum-resistant” stock, and the only one we would advise fruit growers living in the snow-belt of the mountains to plant, as being more able to withstand the attacks of the gum than budded trees.

California D'Ente, or Petite Prune, or French Prune.—This good and pretty type of the Prune D'Ente was introduced from France into California in the year 1857, by Mr. Pierre Pellier, of San José, and has since been propagated all over the State, under the name of Petite or French Prune. The name of Petite (small) was given to it so as to distinguish it from a larger type, the Hungarian or Pond's Seedling, thought at the time to belong to the same family, and which went and is going yet on some nurserymen's catalogue under the wrong name of “Grosse” Prune D'Agen. This type of the D'Ente is excellent for drying; the fruit is from small to medium, more or less pyriform, according to localities; reddish-purple, violet-red in our mountains; very sweet, and juicy enough.

That name of French or Petite Prune should be entirely dropped off by nurserymen, prune growers and packers, and its real name, California D'Ente, substituted in its place. The Prune D'Ente goes all over the world under no other name—not a box, canister or glass jar leaving the port of Bordeaux, which ships away millions of them, but under that name. “French” Prune is no name at all, for the Saint Catherine, a fair rival of the D'Ente and yellow when fresh, is as much *French* as the D'Ente and as old, too. Prune D'Agen, that the city of Agen has tried pretty bad to have substituted to the true name of that prune (D'Ente), has been rejected by the shippers of that prune in France. So let us, if we are to meet on the same markets, home or abroad, the French article, give to our

prune its true name, "California D'Ente."

Loire D'Ente.—The type commonly kept and propagated in the valley of that name, in the northwest of France, and which, for that reason, we have called "Loire" D'Ente; it is certainly a false type of the D'Ente proper, as is found in the valley of the Lot; its botanical characters, wood, buds, leaves and also fruit, vary considerably from those of the *true* D'Ente, It is a very prolific kind; the fruit is oblong, with a well-defined suture, and certainly not pyriform; much darker in color, fresh, than the Lot or California D'Ente; it ripens a week or two before the two latter ones; it dries well, but has not the sweet, and rich flavor of the true type.

This is the type that some nursermen in California have imported from the nurseries of the Loire Valley, thinking that it was a pure type of the D'Ente, and which they are advertising under the name of Robe De Sergent, or *true* Prune D'Agen.

Puymirol D'Ente.—This is another type of the D'Ente, but differing much in its botanical characters from the D'Ente proper; it originated at Puymirol, in the southwest of France. The fruit is uniformly large and of a fine shape, like shown in Fig. 23; it is somewhat more early than the D'Ente, very sweet, and dries well; it makes a first quality prune. The tree is productive, the fruit growing around the limbs much like the Greengages and St. Catherine, close together. We cannot but highly recommend this fine variety.

Violet Perdignon.—Tree quite vigorous and productive; fruit medium large, perfectly round; skin deep purple, covered with a deep azure bloom; flesh reddish at maturity, moderately juicy, and but slightly perfumed; parts well from the stone. Very late, hanging splendidly on the tree; cures very nicely, and keeps a round shape when cured. A very desirable kind to eat fresh, for its good keeping qualities. As a prune however, it has nothing whatever to compare with the D'Ente, and Saint Catherine.

Red Perdignon.—This is the prune which, cured in a particular way at Brignoles, in Southern France, constitutes the Brignoles Prune of Provence. The fruit is quite large, perfectly round, light pink color, juicy, nicely flavored in fact a splendid prune for dessert. Its curing qualities are not good, on account of its juice, and dried is far from being so sweet as the D'Ente.

Saint Catherine.—An old variety, and one of the most celebrated kinds. Extensively cultivated in the valley of the Loire (France), where the D'Ente gives poor results. Besides making a superior prune, it is also much esteemed for preserving, and

is excellent for dessert. The fruit is of medium size, obovate or roundish oval, with a rather well marked suture on one side; skin just thick enough to allow the fruit to dry splendidly; of a golden pale yellow; overspread with a thin bloom, and sometimes becoming rose violet on the sunny side. The flesh is yellow, firm and juicy, adhering but little to the stone; (here in California, we find it a perfect freestone), the flavor is very rich, perfumed; one of the best prunes to eat fresh. It ripens, according to localities, from the later part of August to the middle of September. A vigorous grower and constant bearer; propagated "true from the root." The fruit *fresh* stands shipping well; dried it retains the most of its bulk, and turns very dark.

In size the St. Catherine compares well with the French or D'Ente prune. (See Fig. 22.)

Italian Questche.—Medium to large; dark purple; cures well.

German Questche.—Fruit long, oval, purple; separates from the stone; cures well.

Alsatian Questche.—Smaller than the German Questche, but of the same quality.

Knight's Green Drying.—Fruit very large, almost round; greenish-yellow, firm, sweet, good for dessert; said to be splendid for drying. (Didn't bear yet with us.)

Dame Aubert.—A magnificent yellow plum, of the size of Coe's Golden Drop, but like the latter, drying badly, and sub-acid when dried. Superior to Coe's fresh; splendid for preserving.

Double Prune d'Agen or Double Robe.—Fruit very large, growing to four ounces; egg-shaped; skin thin, reddish-purple and covered with bloom; pulp yellow, soft, very juicy, sweet and highly flavored. One of the very best dessert plums. Much of the fruit grows in pairs, hence its name, "Double Robe;" an entirely different kind from Hungarian, or Pond Seedling.

On account of the fruit being so juicy, it is hard to cure; dried it makes a very large, jet-black prune, but quite acid like the Hungarian, Coe's and Dame Aubert; not very suitable for market.

New and Valuable Prune, (for the season of 1889-90.)—We secured this fine variety several years ago from the South of France, where it had just been put to market; it is a parent of the D'Ente, though its botanical characters differ somewhat from the latter, and was discovered in an old abandoned monastery of the Lot. The fruit grows *uniformly large*, is of first quality, curing nicely and making as fine a prune as the best D'Ente or St. Catherine prunes.

PART THIRD.

FRUIT TREES,

(ALL FREE FROM INSECT PESTS.)

CHERRIES.

We wish to call special attention to those most valuable kinds of Cherries introduced by us into California, those *April* kinds, the earliest ones to be found in the State, viz.: Early Tarascon, April Guigne, Guigne Marbrée, and Early Lamaurie. Near Vacaville, in Solano county, cherries were picked on our Guigne Marbée between the 25th and 28th of March. The same kind, at this altitude (2,600 feet), is ripe to pick about the tenth of May.

Early Tarascon.—One of the earliest and most prolific cherries growing in immense clusters. Fruit medium large, roundish, inclining to oval; skin dark red, almost black at maturity; flesh purplish red, sweet and rich flavor; very small stone. April.

Guigne Marbrée.—As early as Tarascon; also very productive. Fruit medium large, roundish oval; skin dark red; flesh purplish red, tender, juicy, delicate flavor. Stone quite small. April.

April Guigne.—Medium large, round, dark red, very early. (Of recent introduction.)

Early Lamaurie.—A new and very early kind, much prized for its precocity and beauty. April. (Of recent introduction.)

Bigarreau de Mai.—A new ox-heart variety. May.

Royal Hative, or Mayduke.—One of the most popular sorts; Fruit roundish growing in clusters; flesh reddish, tender and melting. A constant and heavy bearer. May.

Bigarreau Grosse de Mezel.—Fruit very large, oblong, heart-shaped; skin dark red, very glossy, nice flavor. June.

Glossy Black.—Hardy and very productive; medium large. June.

Spa, or Belle De Chatenay.—July.

Queen Hortense.—July.

Montmorency.—July.

Napoleon Bigarreau.—July.

Early Purple Guigne.—May.

Yellow of Crimea.—Late.

Violet Bigarreau.—New.

Black Tartarian.—Medium.

PLUMS.

Common Green Gage.—Fruit medium, round; greenish yellow; very juicy. August.

Bayay Green Gage.—Large, round, greenish yellow; excellent flavor. Late.

Diaphane Green Gage.—Very light greenish color, almost transparent; delicious. Middle of August.

Duane's Purple.—Very large, egg-shaped, reddish purple, sweet. Very early.

Coc's Golden Drop.—Very large, oval, yellow, nicely flavored. September.

Monsieur Rouge.—An old, esteemed variety. Fruit large, perfectly round, dark red; juicy, and nicely flavored; a perfect freestone. August.

Royale de Tours.—Large, purple; juicy, sweet, rich. Very early.

Damas de Tours.—Medium, dark blue; productive; quite early. July.

Jaune Hative, or Early Yellow.—The earliest plum, not even excepting the Cherry plum. Medium, oval; skin amber-yellow; of nice and pleasant flavor. July.

Cherry Plum, or Red Myrobolan.—Round, medium, light red; juicy, but little flavored. July.

Pond's Seedling.—The largest plum known; egg-shaped, light purple, juicy; little flavored. September.

Petite Mirabelle.—A small but delicious plum. Very juicy, rich flavor.

Blue Damson.—Small, obovate, sweet, little flavored. Good for preserving.

Monsieur Jaune.—Round, medium large; yellow, juicy; nicely flavored. August.

Besides, we highly recommend for desert the following kinds described under the head of Prunes, viz: Dame Aubert, Double D'Agen, St. Catherine, Perdignon.

APRICOTS.

Boulbon.—One of the best for shipping; an entirely new and most valuable variety. Before getting ripe the fruit is said to get a beautiful red cheek; and, as apricots for shipping at a distance have to be picked green, this kind has the advantage over all others of always having a cheek dotted with carmine. It is the largest apricot we

PLATE IV.



Fig. 29.
AVELINE FILBERT.

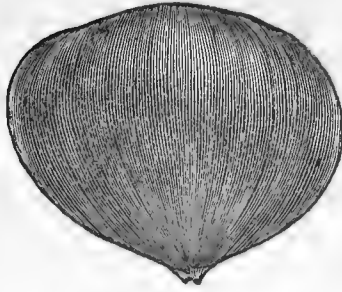


Fig. 30.
MARRON COMBALE CHESTNUT.

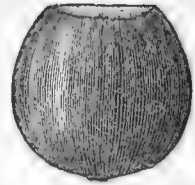


Fig. 31.
PIEDMONT FILBERT.



Fig. 32.
EVER-BEARING BLACK MULBERRY.
(Noir of Spain.)

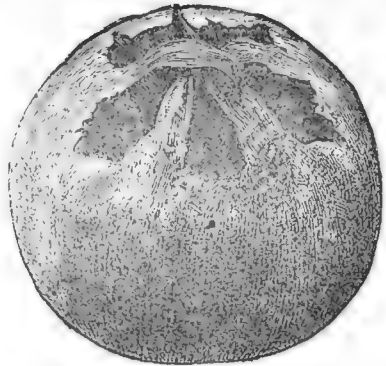


Fig. 33.
MEDLAR.



Fig. 34.
CHABERTE.



Fig. 35.
SORBUS.

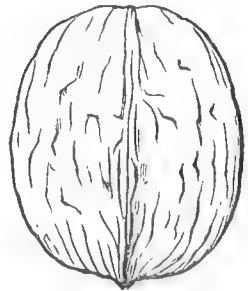


Fig. 36.
CLUSTER.

All the Nuts and Fruit on this Plate "California Grown."

(Copyrighted.)

have ever grown upon our place. We recommend it as one of the very best to plant.

Esperen Early.—The earliest apricot; medium large, juicy and well flavored.

Musk Early.—A new variety obtained from the south of France. It is claimed to be as early as Esperen and to have a rich, musky flavor. (Didn't bear with us yet.)

Mexico.—Medium large; very sweet, very juicy, delicious flavor. One of the very best.

Duclos.—Angoumois.—Mille.

PEACHES (FREESTONES).

Amsden, Alexander, Briggs Red May, St. Ascydes, Hale's Early, Grosse Mignonne, Early Crawford, Belle of Doué, Queen of Orchards, Nivette, Late Chatenay, Picquet's Late, Red Magdalen, etc.

CLINGSTONES.

Royal George, Day's White, 20-ounce Cling (orange).

NECTARINES.

New White—Orange, violet or purple.

PEARS.

Duchesse d'Angouleme.—October.

Sugar Pear.—August.

Bartlett.—August to September.

Summer Doyenne.—July.

Bon Chretien.—A pretty and delicious little pear. October.

Beurre Clairgeau.—November.

Passé-Colmar.—Medium; very sweet. January.

Winter Nellis.—January.

Beurre Easter.—Late.

Passé-Crassanne.—Very large; one of the finest winter kinds. February to April.

Bergamotte-Esperen.—Medium large; highly flavored; keeps till April.

Winter Royal.—Medium; very late.

Catillac.—For baking.

Beurre Goubault.—Large; fine. January to February.

Assomption.—Immense pear; about as early as Bartlett. Only a few trees this season at 50 cents each.

APPLES.

Spitzenberg, Newtown Pippin, Winesap, Swaar, Rhode Island Greening, White Pearmain, Red Astrachan, Yellow Bellflower, Stump, Golden Reinette, Red Calville, White Calville, Winter Rambour.—Cider varieties.

FIGS.

San Jose Black.

White Magdalen.—The earliest.

Jaune Longne.—Yellow.

Noirmoutier.—Yellowish red.

Pagandiere.—Yellowish red.

Buissonne, Franche Paillarde, Versailles, Napolitaine.

MULBERRIES.

Noir of Spain, or Ever-Bearing Black Mulberry.—Fruit very large, sweet; most delicious flavor; very juicy. This variety, introduced by us into California, is acknowledged as being the very best of the Black Mulberry family. Its growth is slow, but it grows and thrives in any kind of soil and at any exposure. The Noir of Spain blossoms out so late in the spring that it is never injured by frosts. From the time the berries commence to ripen (July), it keeps on bearing until October. (See Fig. 32.)

Russian.—A kind of Black Mulberry much talked about these late years, said to do well in the Northern States, but greatly inferior for its fruit to the Noir of Spain.

QUINCES.

Constantinople.—The largest quince known; bright golden yellow; very productive. The boss quince.

Portugal.—Very large; much esteemed. Very productive.

MEDLARS.

Medlar monstrous.—The largest of Medlars; very productive. When picked from the tree, the fruit is very harsh and astringent, like the persimmon and sorbus, but through the winter it gets mellow, and is then really palatable. Ripens in January.

The Medlar, or *Mespilus Germanica*, is a very pretty tree—fine foliage and large blossoms, the latter coming out so late that they are never nipped by frost. The Medlar is a precocious, prolific and regular bearer. Every garden should have a Medlar tree or two. (See Fig. 33.)

SORBUS.

Sorbus Domestica.—A native of Europe, growing to a height of thirty to forty feet. The wood of the sorbus is very hard and finely grained, and is much used by engravers and cabinet makers. Its beautiful umbels of white flowers are succeeded by most pretty little fruit, having the shape of small pears with a red cheek. Like the Medlar, the fruit has to get mellow before it is fit to eat. The sorbus is as much an ornamental as a fruit tree, and is well recommended for both. (See Fig. 34.)

ORNAMENTAL TREES.

Cornus Mascula.—A very showy tree, with innumerable umbels of rather bright

yellow flowers, which bloom in February. A very hardy tree, never being injured by frost; fruit amber yellow, of the size of a small olive, but more slender. Another variety is "red fruited."

Cratogeus azarolus.—(Yellow and red fruited.) Highly ornamental, growing to a height of 20 to 25 feet. Its wood is finely grained and very hard, and is employed by cabinet makers. The cultivated kinds of azarolus are without spines. The fruit is a pretty little apple, round, sub-acid, of the size of a crab apple.

Cratogeus Oxyacantha, or White Thorn.—Very common in Europe. By the first of May the tree is covered all over with umbels of fragrant little flowers, succeeded by red berries.

Cratogeus Crus Galli, or Black Thorn.—Same flowers as the White Thorn, succeeded by clusters of dark blue berries. The tree is armed with long and stout spines, hence its name of Cock-spur Thorn.

Large Fruited Thorn.—A very showy tree, of rapid growth, fruit as large as a cherry, and of a beautiful bright red.

Double Flowering Thorn.—**Double Red Thorn.**—Bright red double flowers. Very pretty.

Flora Plena Thorn.—One of the prettiest Thorns.

Alba Plena Thorn.—White flowers, very ornamental.

Holland Linden.—Large, light green leaves. Rapid grower.

Hungarian, or Silvered Linden.—Large, thick leaves, dark green, silvery underneath; makes a splendid shade tree.

Horse Chestnut.—A very pretty shade tree.

Canada Poplar.—An erect and rapid grower, very ornamental.

Long-leaved Elm.—The finest kind; grafted on the root.

Locust Decaisneana.—Fine rose flowers produced in great abundance.

Locust Semperflorens.—A constant and abundant bloomer.

Locust Viscosa.—Rose-colored flowers; branches gummy.

Locust Moss, or Rose Acacia.—A beautiful flowering variety.

Locust Globe, or Parasol Acacia.—A remarkable thornless variety; pretty tree with a round dense head.

—All those locusts are grafted on the root.

Holly.—A very ornamental evergreen.

Paw Paw.—The Banana-Tree of Missouri.

CALIFORNIA LILIES.

"White" and "Tiger" Lilies, 50 cents each; 75 cents per mail.

Pink roots, with description of the flower 50 cents per root. (Too heavy to be shipped by mail.)

SELECT ROSES.

We are able to present to our customers this season, the very finest select roses, *budded on Manetti stock*, at 2 to 3½ feet from the ground, and of the following varieties:

La France.—A magnificent remontant rose; the color is of a lovely rose, with silvery lustre. A constant bloomer, and very sweet scented. The first crop of flowers in the spring, bears roses from 5 to 6 inches in diameter. Extra fine.

Coquette Des Blanchés. (Queen of the White).—Medium size, very double, sweet scented; a constant bearer. White, some with a light purplish tint. Very pretty.

Baronne Prevost.—Flowers flat, large, dark rose, very fragrant. Extra fine. Remontant.

Duchesse De Nemours.—Medium large, brilliant, dazzling red; splendid. Remontant.

Comtesse De Morny. Bright rose, very large; from 4 to 5 inches. Remontant.

Richard Cœur De Lion.—Large flat, brilliant deep rose. Remontant.

Coquette De Lyon.—Tea rose, canary bird yellow; Beautiful. A constant bearer.

Belle Lyonnaise.—Tea rose; copper yellow. Elegant; remontant.

Gloire Des Mousseuses.—A magnificent moss rose.

CLIMBERS.

Belle of Baltimore.—Growing in large clusters; small to medium; white and rose-tinted.

Seven Sisters.—Very pretty and rapid climber. Grows in clusters of six to eighteen little roses of all shades. Most charming.

ROSES GROWN FROM CUTTINGS.

La Neige.—Pure white.

Souvenir of the Queen of England.—Very large, bright rose. Remontant.

Also Comtesse De Morny, Duchesse De Nemours, Richard Cœur De Lion, Hermosa, Moss Rose.

PART FOURTH.

GRAPES.

TABLE, RAISIN AND WINE VARIETIES.

No Phylloxera in our Mountains.

We offer to the public rooted vines and cuttings of the most complete and magnificent collection of foreign grapes to be found in California and the United States, a good many of those varieties having been procured, at great expense, from abroad.

All the varieties marked with an asterisk (*) have not yet fruited with us; and as we have taken for a rule to sell no vines nor cuttings of any variety before it has fruited in our vineyard, we would, therefore, decline any orders for such kinds.

We are adding, every season, new varieties to our already vast collection: in this way have we found which are the varieties best suited to our soil and climate, and also the *earliest* kinds and the most valuable for market. Our collection of Muscats is unique, and comprises grapes of all colors, viz: black, blue, maroon, red, rose, white, gray, green and yellow. Our early varieties—the earliest ones to be found in the State—ripen as much as 25 days before "Sweet Water."

Our space does not permit to give a full description of each variety, many of which, however, are extra fine ones.

*Chasselas Angevin.

Chasselas Bulhery.—A splendid white grape, from two to three weeks more early than Sweet Water. Bunches large, well set; berries medium large, round, white, transparent, finely flavored. Excellent for shipping.

Chasselas Ciotat or Parsley Leaf.

Chasselas Coulard.—Early.

*Chasselas De Provence.—Very early.

*Chasselas De Malakoff.

Chasselas Dupont.—Bunches large, well set; berries medium to large, round, perfectly transparent, juicy, sweet, splendid flavor. Very productive. White. One of the very best for table use and shipping, on account of its beauty, quality and productivity.

*Chasselas De Debernardy.—Early.

*Chasselas Dugommier.—Early.

*Chasselas Duhamel.—Early.

*Chasselas De Falloux.—Very early.

Chasselas Fendant Rose.—Early.

Chasselas Fendant Blanc.—Early.

Chasselas De Florence.—Medium.

Chasselas Jalabert.—White; early.

Chasselas Mamelon Blanc.—White.

*Chasselas musque.—White.

Chasselas Oblong.—White.

Chasselas De Fontainebleau or Thom-

ery.—Bunches medium; berries medium, well set, round, sweet, well flavored; skin thin. Early.

Chasselas De Pondichery.—Bunches large, well set; berries very large, spherical, white, peculiar and nice flavor; skin thick. Late.

Chasselas Rose.—Bunches medium, well set; berries medium, sweet; skin light pink. Very early.

Chasselas Royal Red.—A beautiful variety. Bunches large, well set, berries large, round, juicy, highly flavored; deep red, turning almost to black at full maturity. Very productive. Medium.

Chasselas Royal Blue of Windsor.—Bunches large, well set; berries large, juicy, well flavored; dark blue. Medium.

Chasselas Sageret.—White.

*Chasselas Toulard.—Early.

Chasselas Violet.—Bunches long, rather loosely set; berries large, elongated oval, very sweet; rich flavor. Violet color, with heavy bloom. A most beautiful and delicious grape. Very early.

Chasselas Vibert.—White; early.

Aspiran Noir.

*Abourlah.—Large, red; late.

*Alep.—Black.

*Aleatico Roseo.

*Barbaducis.—White, large.

*Balafant.—Large, white; early.
 Bastardo.—Black.
 Barbarossa.—Large, rose.
 *Blauer Portuguiser.—Blue.
 *Balavry.—Black.
 *Brustiano.—White.
 *Beni-Salem.—White.
 *Boudales.—Large, black.
 Black Prince.—Large; medium.
 Blanc D'Ambre.—White; early,
 Blussard Noir.—Large; medium.
 Black Hamburg.—Large; medium.
 Calabre Blanc.—A magnificent ship-
 ping grape. Bunches medium large; ber-
 ries medium large, well flavored; skin thick,
 amber white. Stems tough. Medium late.
 Caserno Noir.—Bunches large; berries
 large, oval, juicy, very sweet, well flavored;
 jet black. Early. A splendid variety.
 Cariniana Rose.—Large; medium.
 *Catalan.—Red.
 *Calabazar.—White.
 Celestino Noir.—Large; black.
 Chaptal.—Large; white.
 *Colorado.—White.
 Cornichon Violet.—Large; deep red.
 Cornichon Blanc.—Large, white.
 *Corbeau.—Large, black; early.
 *Cornet Noir.—Very early.
 *Cruxen.—Black.
 Decandolles.—Very large, white.
 *De La quasaba.—Black; late.
 Dinka Blanc.—White.
 *Duc De Magenta.—Black; early.
 *Dureza.—Very early.
 Dolcetto Nero.—Black; very sweet.
 Emperor.—Large, oblong, deep red.
 Franckental.—Large, black.
 Frederickton.—Large, black.
 Fintindo.—Bunches very large, thickly
 set; berries large as Damson plums, flesh
 firm; dark red. Very showy. Medium
 late.
 *Forest.—Large; black; early.
 Four-Shouldered.—Purplish-red.
 Gros Maroc.—Very large; dark red.
 *Gradiska.—White.
 *Grec Rouge.—Large, deep red.
 *Gros Colman.—Large, dark purple.
 *Grunne Kadarka.—Green-white.
 *Goher Hatif.—Black; early.
 *Guillandoux.—Early.
 Gros Makara.—Black.
 Gros Sapat.—Bunches large, well set;
 berries large, oval, sweet, delicious flavor;

black, with heavy bloom. Very early. A
 beautiful variety.

× Gros Damas.—Bunches large, well set;
 berries large, roundish-oval, juicy, highly
 flavored; jet black. Medium. Very fine.

Gros Guillaume.—Bunches large, well
 set; berries large, sweet, highly flavored;
 black. Medium. Fine variety.

Gros Gromier.—Bunches very large,
 thickly set; berries medium, sweet; pink
 colored; enormously productive. Medium.

General De La Marmora.—Bunches
 large, well set; berries large, roundish-oval,
 transparent white; sweet and splendidly
 flavored. Medium. Very handsome variety.

Ischia, or Genoa Early.—Bunches
 small to medium; berries medium, sweet;
 jet black. Very early; over two weeks
 more early than Sweet Water. The first
 black grape to ripen with Black Magdalen.

*Hycales.—White.

Joannen Charnu.—Large; medium.

Janny Zolve.—White.

*Jericho.—Black.

Kokur of Crimea.—White.

*Kisch-Misch.—Amber-green. Seedless.

*Kischmisch-Ali.—Red.

*Karaod.—White.

*Ketsket-zetzu.—White.

Ladies' Fingers.—Large, oblong.

*Lista Blanc.—Early.

*Lacryma-Christi.—Black.

*Lambruscat.

*Leany-Szello.—White.

*Limdi Khamat.—Red; early.

Long Noir of Spain.—Jet black.

Malingre Early.—Bunches medium;
 berries medium, oval [juicy, sweet, well
 flavored; white. Very early. Two weeks
 more early than Sweet Water.

Minestra.—Bunches large, well set; ber-
 ries large, sweet, well flavored; black. Very
 fine. Medium.

Magdeleine Noire.—Bunches medium,
 thickly set; berries small, juicy; black.
 The earliest black grape with Ischia, ripe
 three weeks before Sweet Water.

Magdeleine Blanche.—Bunches me-
 dium large, well set; berries roundish oval;
 medium, sweet, juicy, well flavored; very
 productive; white. Very early; one of the
 earliest white grapes.

Marshal Bosquet.—White.

Miller.—Light pink.

Morillon Panache, or variegated.

Malvoisie Blanc.—Bunches large, well
 set; berries medium, very sweet, well
 flavored; skin thick; white. Enormously
 productive. Late.

- *Malvoisie Noir.**—Dark red.
- *Malaga Blanc.**—Oval, white.
- *Malaga Rose.**—Oval.
- Mission, or Los Angeles.**—Bunches large, loosely set; berries medium, very sweet; enormously productive. Late.
- *Nosco.**—White.
- Olivette Jaune.**—Amber-white.
- *Papaona.**—White; early.
- Palestine.**—Large; white.
- Pearl of Anvers.**—Bunches medium, well set; berries medium large, sweet, juicy, well flavored; transparent white. Excellent. One of the earliest, ripens three weeks before Sweet Water.
- Poulsard Noir.**—Bunches large, well set; berries large, roundish-oval, sweet, juicy; highly flavored; jet black. Very fine. Medium early.
- Purple Damascus.**—Large; late.
- *Precoce De Kienzheimer.**—Early.
- *Precoce De Hongrie.**—Black; early.
- *Precoce De Montreuil.**—Very early.
- *Precoce De Marseille.**—Early.
- *Pedro-Ximenes.**—White.
- *Perle Imperiale.**—White.
- Œil Noir (Black Eye).**—Bunches large, well set; berries olive-shaped, large, very sweet, juicy; highly flavored. Early. A splendid variety.
- Rose of Peru.**—Large, deep red.
- Ramonia of Transylvania.**—Bunches heavy and well set; berries very large, round, as large as Damson plums; sweet, well flavored; dark blue, with heavy bloom. Medium. A most magnificent grape.
- Shiras.**—Bunches long; berries large, olive-shaped, sweet and highly flavored; dark blue, with heavy bloom. Very early.
- Saint Bernard.**—Large, white.
- Serciat.**—White.
- *Saint Pierre.**—Large, white.
- *Sinker.**—White.
- *Solferino.**—Maroon color.
- *Sucre de Marseille.**—Early.
- Sultan Violet.**—Large.
- *Sabals kankoi.**—Light pink.
- Sweet Water.**—Early.
- *Sizva-Stollo.**—White; early.
- Seedless Black Corinth.**—Dried, it is known under the name of "Zante Currants."
- Seedless Rose Corinth.**
- Seedless White Corinth.**—Heavy bearer.
- Seedless Sultana.**—Bunches large, shouldered; berries small, seedless, sweet. Splendid for drying.

Tokay (Flame Colored).—Bunches very large, well set; berries very large, olive shaped, firm, pink colored. Very showy and an excellent grape for shipping.

***Tinto d'Alicante.**—Black.

***Torok Zello.**—Black.

***Tokos.**—Blue.

Ulliade.—Bunches very large; berries quite large, oval, sweet, well flavored; black; very productive. Medium. One of our finest varieties.

***Vert De Madere.**—Early.

***Verdetto.**—White.

***Xeres.**—White.

***Zitzen-Zitzen.**—Rose.



MUSCATS.

Our collection of Muscats, the finest one to be found anywhere, comprises the most delicate kinds, and grapes of all colors, viz: Black, blue, red, rose, gray, maroon, white, yellow, green.

Muscat of Alexandria.—Bunches large; berries large, oval, firm, well flavored. Late. One of the best for drying.

Muscat Bifere.—Round, white.

Muscat Cailaba.—Black; early.

Muscat Eugenie.—White; rich.

Muscat Gris.—Whitish-gray.

Orange-Flowered Muscat.—Most delicate, rich flavor. Early.

Muscat De Saumur.—Early.

Blue Muscat.—Bunches small to medium; berries medium, juicy, sweet; nice dark blue. One of the earliest grapes; ripens three weeks before Sweet Water.

Red Muscat of Madeira.—Bunches medium; berries medium large; nice dark pink color; nicely flavored. Medium.

Muscat De Frontignan.—Bunches cylindrical, medium; berries set close, like corn; very juicy; highly flavored; one of the earliest grapes.

***Muscat Jura.**—Black; early.

Muscat Marron.—Chestnut color.

Muscat Lazerelle.—Berries round, medium, white, firm, sweet; highly flavored. Delicious. Medium.

***Muscat D'Espagne.**—Early.

Muscatel.—Splendid for drying.

Muscat Primavis.—White.

Muscat Sarbelle.—Very large, round, firm, nicely flavored. Medium.

***Muscat De Vaucluse.**—White.

***Muscat De Patras.**—Early.

***Muscat De Smyrne.**—Early.

***Muscat Kepens.**—White; early.

- *Muscat D'Asti.—White.
- Muscat D'Ernstadt.—White.
- *Muscat D'Alma.—White.
- *Muscat Romain.—White.
- *Muscat Du Po.—White.
- *Muscat Caminada.—Large, white.
- *Muscat De Malte.—White.

RAISIN VARIETIES.

Muscat of Alexandria; Muscat D'Espagne; Muscat Lazerelle; Muscatel; Malaga; Chaselas Vibert; Seedless Sultana; all the seedless Corinth (black, rose and white).

WINE VARIETIES .

We would call the attention of grape-growers and viniculturists to our fine collection of wine varieties. Many of these varieties have been introduced by us into this State the last seventeen years and thoroughly tested; we cannot but warmly recommend every one in the list.

- Aramon.—Black; heavy bearer.
- Alcantino De Florencé.—Black; early.
- Aunis.—Black; heavy bearer.
- Aramon-Bouschet.—Black.
- Alicante-Bouschet.—Black.
- Carmenet, or Carbenet of Medoc.—Black; early. Very fine bouquet.
- Cabernet-Sauvignon.—Black.
- Chauche Noir.—Black.
- Clairette Blanche.—White.
- Cot-De-Tourraine.—Black; early.
- Cot-a-Queue Verte.—Black; early.
- Charboneau.—Black; heavy bearer.
- Carignan.—Black.
- Delhys Noir.—Black; Productive.
- Etraire - De - L'adui.—Bunches very large, shouldered; berries medium, round inclining to oval, juicy, deep black; very heavy bearer. Medium early. Said to be a resistant stock. Very vigorous.
- Grenache.—Black; heavy bearer.
- Gamay. (Petit). Heavy bearer.

- Gamay Malin.—Black; early.
- Gros Rouge.—Deep red; early.
- Juranson Noir.—Black.
- Mondeuse De Savoie.—Deep blue.
- Mataro.—Black; heavy bearer.
- Malbeck.—Black; heavy bearer.
- Merlot.—Black; early.
- Meunier.—Black.
- Morastel-Bouschet.—Deep black.
- *Morillon Noir.—Black.
- *Morillon Blanc.—White.
- *Melinet Blanc.—White.
- Noir De Pressac.—Black.
- Pineau of Burgundy.—Black; ear y.
- Pineau Blanc.—White.
- Pineau Gris.—Grayish white.
- Petit Bouschet. — A cross between Teinturier and Alicanthe. Bunches medium; berries medium, very dark-juiced; good bearer; very early.
- *Perle Noire.—Black.
- *Roussanne.—White.
- Petite Sirah.—Black; early.
- Riesling.—White.
- Sauvignon Jaune.—Bunches medium; berries medium large, well set, transparent, yellowish-white. Early. Produces in California a superior white wine
- Semillon Blanc.—White.
- *Serine Noire.—Black.
- Teinturier — Bunches full and close; berries small, round, full of very dark juice. Excellent for coloring light wines. Very early.
- *Trousseau.—Black.
- *Terret-Bouschet.—Black.
- *Viognier.—White.
- Zinfandel.—Black.

AMERICAN VARIETIES

- Catawba.—Vigorous grower; very productive. Late.
- Champion.—Bunches small; berries medium; deep black; highly flavored. Very early.

PART FIFTH.

SMALL FRUIT.

STRAWBERRIES.

Rubies. (French.)—Fruit large, regular, conical but broad; sweet, well flavored, deep brilliant, glossy scarlet. First rate for shipping. Early.

Carolina Superba. (French.)—Fruit very large, two inches long; conical in shape, regular; bright scarlet. Prolific. Very early.

The Lady. (English.)—Large, broad; light crimson; sweet, peculiar flavor; very productive. Medium. Bears a second crop in the fall.

Flora. (French.)—Large, long, well-shaped; deep scarlet; heavy bearer. Medium.

Princess Dagmar. (English.)—Uniformly large; immensely productive; conical shaped; sweet, excellent flavor; light crimson. Bears a second crop in the fall.

Young Wonderful. (English.)—Long, conical berry, deep crimson, very productive; medium.

Cornish Diamond. (English.)—Large, conical, well flavored; red berry. Late.

Exhibition. (English.)—Large, deep red; delicious flavor; heavy bearer. Medium.

Gloire De Zuidwyk. (Dutch.)—Originated in Holland. Berries very large, wedge shaped; flesh firm; salmon colored; highly flavored. Medium.

Downing. (American.)—An old but valuable variety; every rooted runner bears in the ensuing spring; splendid sort to cultivate in matted rows. The earliest strawberry that we have ever grown upon our place, and we have tested more than a hundred varieties. Fruit small to medium large, roundish-ovate, deep crimson; seeds deeply imbedded; flesh tender, rich, excellent flavor. Should be in all gardens.

Common English Red Wood.—Fruit red, small, roundish-ovate; bears monthly.

NOVELTIES.

Matador. (French.)—Very large.

La Bicolore. (French.)—Large.

Crystal Palace. (English.)—Very large. First quality.

British Sovereign. (English.)—Large.

Marshal Von Moltke. (German.)—Very large.

Abd-El-Kader. (French.)—Very large.

Boisselot. (French.)—Very large; heavy bearer; medium early.

Beauty of England.—Very large; first quality.

RASPBERRIES.

French Everbearing. (Three crops a year.)—Very large; deep crimson. Very early.

Cuthbert.—Very large; deep rich crimson.

BLACKBERRIES.

Wilson's Early.—Large, oblong, jet black, sweet, rich. Very early.

Kittatiny.—Large, very long, glossy black; well flavored. Medium early.

Lawton.—Large, sweet, well flavored; good bearer.

CURRENTS.

Imperial Red.—Bunches long; prolific.

Imperial White.—Bunches long, berries large.

Cherry.—Fruit of the largest size, red; prolific.

Fay's Prolific.—Greatly inferior to Cherry in size of berries and productiveness.

Common Black.—Berries large; jet black.

ENGLISH GOOSEBERRIES.

The Gooseberry plants we offer for sale are grown from "layering" and well rooted, and guaranteed to faithfully correspond to the description we give herewith. We will add that our Gooseberries go only under one name, and that that name is not changed every other year to suit the whims or speculative propensities of enterprising tree and plant dealers.

Alma.—Large, roundish-oval, greenish.

Australia.—Large, oval, amber-white.

Angler.—Very large, light green.

Bank Europe.—Large, oval, greenish-white.

Broom Girl.—Very large, round, inclining to oval.

Britannia.—Large, oblong, yellow, somewhat hairy.

Bunker Hill.—Very large, round, white.

Crown Bob.—Very large, roundish, oval, white, rosy cheek; a little hairy.

Conquering Hero.—Large, oblong, greenish, red cheek.

Echo.—Large, oval, greenish-white.

Freedom.—Very large, oblong, rosy cheek.

Free from Fault.—Very large, round inclining to oval; greenish-white, red cheek.

Guido.—Large, oval, red, little hairy.

Gunner.—Very large, round, green, somewhat hairy; almost as large as a walnut.

Green Mountain.—Large, oblong, green.

Golden Chain.—A magnificent berry-two inches long; elongated, oval, amber white.

Gerengage.—Medium large; perfectly round; greenish-white, transparent; a daisy.

General.—Very large, round, green.

Irming.—Large, oblong, green; a little hairy.

Justicia.—Large, oblong, white; somewhat hairy.

Lion's Provider.—Very large, elongated, oval; red all over at maturity.

Lady Laster.—Very large, oblong, white; a few hairs.

Lady Delamere.—Large, round, inclining to oval, transparent green.

La Favorite.—Very large, roundish oval, green.

Lulu Painter.—Large, oval, green.

Lobster.—Very large, oblong, red.

Larnout.—Large, oblong, white.

Marigold.—Large as a walnut; round, transparent white.

Major Hilbert.—Large, roundish-oval, red.

Merry Monarch.—Very large, oblong, bright red, somewhat hairy.

Morning Star.—Very large, round, inclining to oval; transparent white.

North Briton.—Large, roundish-oval, greenish-white.

Overall.—Large, oblong, green.

Prince Regent.—Very large, elongated oval, white.

Proft.—Large, oblong, white.

Pern.—Large as a walnut; round, inclining to oval, white; a few hairs.

Princess Royal.—Medium, round, red; a few hairs.

Queen.—Very large, roundish oval; amber white.

Rockwood.—Very large, almost round, amber-white.

Rigby's Honeymoon.—Large, oval, white.

Roaring Lion.—Very large, roundish-oval; white, with red cheek.

Rob Roy.—Medium large, oval, red.

Red Robin.—Large, oval, red.

Snowdrift.—Large, oblong, light green.

Sir John.—Large, round, inclining to oval, amber white.

Slaughterman.—Large, oblong, greenish-white.

Shadwick's Sportsman.—Medium large, amber-yellow; a little hairy. Very prolific.

Smiling Beauty.—Large, roundish-oval, green.

Shumper.—Large, oblong, green.

Speedwell.—Large, oblong, light red.

Sander.—Large, oval, light yellow.

Top Marker.—Very large, oval, pink color.

Traveler.—Large, almost round, greenish white.

Taylor's Ballerophon.—Large, oval, white.

Volney.—Large, oblong, greenish-white.

White Lurin.—Large, oval, white.

Wellington's Glory.—Large, oval, greenish white.

White Smith.—Very large, round, white.

Washington.—Large, oval, rosy cheek.

FRENCH GOOSEBERRIES.

Verte Ovale.—Large, amber green.

Verto Ovoide.—Large, oval, green.

Violette Oblongue.—Large, oblong, purple cheek,

Rouge Clair.—Large, oval, red.

ORANGES AND LEMONS.

Expressly grafted for us, Spring of 1888, from leading varieties of Europe and Algeria.

Portugal Orange.

Blidah Mandarin Orange.

Large-Fruited Lemon.

Corsica Lemon.

We cannot quote prices, which will be moderate, before the trees have arrived from France.

GRAFTING THE WALNUT.

BY FELIX GILLET, OF NEVADA CITY, CAL.

In view of the large number of trees of the worthless kind of walnut that have been planted for over thirty years in California and Oregon, and known by the name of Los Angeles walnut, from the fact that it started out from the county of that name, a delicate and unproductive kind which, outside of those little valleys bordering the sea in Southern California, has proved a complete failure on this Coast; and in view, too, of the extremely difficult way of grafting the walnut, which generally fails when done by the ordinary process, on small as well as on large trees, we trust that this short essay on the best methods of grafting and budding walnut trees, will be welcomed by the owners of such unproductive trees or other kinds that it would be desirable to graft into hardier and finer sorts. An experience of eighteen years in California in the propagating, budding and grafting of walnut trees, of which we have on our place the largest and finest collection to be found anywhere in Europe or America, 23 varieties in all, some of them very rare yet, gives us a right to speak authoritatively as we do on this subject.

The Los Angeles walnut, which, by the way, has been constantly propagated from the seed for the last forty years, without any regard to the degenerating of the species, has three big defects that should make every one reject this variety as worthless; first, it puts forth too early, from two to eight weeks before the French varieties, and is injured by late frosts in the spring three years out of four; second, it does not mature its wood well in the fall, and is nipped again by early frosts at that time; third, it blooms very irregularly, as the owners of such trees can very well ascertain in the spring at blooming time, the male flowers or catkins having all dropped off before the female flowers or nuts had a chance to show themselves; consequently, the nuts not being fertilized by the pollen or yellow dust secreted by the catkins, drop off after attaining the size of a large pea. In this way does that variety keep absolutely barren or at least so unproductive that it has already induced many people throughout this State and Oregon to cut down their trees, some of them thirty years and over, they having come to the conclusion that Central and Northern California and Oregon were not adapted to the walnut. Now we would beg the owners of such large unproductive and tender trees, to quit cutting down their trees, but rather resort to grafting, no matter how large the tree would be, and transform them into

hardy and prolific sorts; and they should at the same time do away with the foolish idea that Central and Northern California and Oregon are not adapted to the walnut, while it is that worthless kind, the Los Angeles walnut, that is not adapted to their climate. Speaking of that delicate and unproductive kind, we will quote from an article to the *Pacific Rural Press* on the "French Walnut Varieties," written several years ago by Mr. W. B. West of Stockton, who has had much experience with walnut varieties in the San Joaquin valley:

"Experience has taught us that the Los Angeles seedling is a very reliable tree, only giving fruit under the most favorable circumstances in Northern California; it grows very thrifty when young, but does not ripen its wood sufficiently to withstand the severe winters that we sometimes have, and if, by chance, a series of mild seasons follow the planting, and the tree attain a good size, it is unfruitful, and seldom pays for the room it occupies.

"Now, the French varieties are entirely different. They are fertile from the first of their life. I have seen a tree of the Proparturiens, three years old, showing female blossoms, and where they can be impregnated by the male catkins of older trees they will mature nuts. I have gathered nuts from a tree scarcely four feet high. Their growth is slow and the wood ripens fully. I have never lost an inch of wood from any frost that has occurred since they were planted, while the Los Angeles trees, near them, have been cut to the ground many times. As to the quality of the nut, there can be no difference of opinion—the French nuts are decidedly superior, the shell is thinner and the meat is very sweet and rich, with none of the bitter skin which always accompanies the Los Angeles kind."

BLOOMING OF THE WALNUT.

A few words first on the blooming of the walnut, cannot but render our further remarks on the walnut more clear to the eyes of people little acquainted with that class of trees and their growth.

The blossoms of fruit trees in general, like those of the cherry, apple, pear, etc., are composed of a pistil and stamens; the pistil, or female sexual organ of the plant, occupying the central portion of the blossom and being connected at its base directly with the young fruit. The stamens, or male sexual organs, are the numerous threads which surround the pistil, all having at the summit what is called the anther, which secretes that powdery substance known under the name of pollen, the use of the stamens being to fertilize the embryo of the seed contained at the base of the pistil, or the fruit proper. Thus blossoms that would happen to be only composed of a pistil could not mature their seed, which would drop off after a while, unless fertilized with the pollen of perfect blossoms from other trees close by.

With the walnut, the pistil and stamens, instead of being on the same blossoms, are perfectly distinct and on separate blossoms. To render this description of walnut blooming more comprehensible, we will accompany it with cuts representing pistillate and staminate buds in a dormant state and also fully developed; and we will add that all these cuts were made by our engraver in San Francisco from specimens taken on our "Second Generation Præparturiens" bearing trees, and are all of *natural size*. Fig. 1 represents a spur or bearing wood of the walnut, thousands such spurs either single or composed of two or three little ramifications are found on large bearing trees; and, *apropos*, people will understand why they should abstain from pruning walnut trees, if they do not wish to cut down their crop of nuts. A are the pistillate buds or catkins in a dormant state; they can well be recognized on any tree as so many little cones, the surface of which looks like that of a minute pineapple. These little cones show themselves on the trees early in the fall; and as soon as they appear on the trees, can such trees be said to have gone into regular bearing. B represents the pistillate bud, also in a dormant state; it grows only on wood of the year's growth, whether that wood be one line or six feet long. That bud in the spring develops into a bunch of nuts imbedded among several leaves. C represents a leaf bud; the upper one near the summit developing into a small spur from a few lines to one inch in length, and terminating with a pistillate bud like B, intended for the following year's crop.

Fig. 2 represents the staminate or male blossoms of the walnut in full bloom; it is composed of over a hundred of very small flowers which secrete a great quantity of pollen, a fine yellow powdery substance that the wind scatters near and far, and in all directions; in this way young walnuts at a distance having only female blossoms or nuts on, have the latter fully fertilized, as it is the case with young Præparturiens trees. Fig. 3 represents the pistillate or female blossoms of the walnut; they look like minute plumes on the top of the embryo nuts, the small leaves that surround the little flowers or nut having been cut off to enable the engraver to give a clear cut of the blossoms. Both staminate and pistillate flowers, as represented in figures 2 and 3, were grown on our large bearing Præparturiens, and show the size of the nuts at the time that the catkins are fully developed. No walnut tree not having any staminate buds or catkins, though showing female flowers or nuts, can be called properly a "bearing" tree.

SHIELD BUDDING.

Common shield budding, as is used with most all fruit trees, fails entirely with small walnuts from one to three years from the seed, and it does but seldom succeed even on larger stocks. That mode of budding is more apt to succeed, however, on stock of the year's growth and of the size of the fore or middle finger, in fact, on any wood of the size represented in fig. 5, or larger, as long as it is of the year's growth. The shield of bark to be inserted should not be less than two inches in length, and as broad as possible, much like that represented in fig. 4. In removing the shield of bark from the cion, one should be very careful not to disturb in the least the corculum, or little cork-like of soft matter, not liqueous yet, that connects the bud itself to the liber or wood along which the sap runs up. Would that little cork-like remain on the cion and leave a hollow back of the bud, the shield of bark would have to be thrown away as worthless, and another one taken from the cion with the corculum on. With walnut budding, no wood whatever should be left at the base of the bud inserted. An incision is then made lengthwise, and where two eyes are far apart and the wood smooth and round, as shown in fig. 5, through the bark of the stock and a cut at right angles at the top, a little longer than the shield of bark to be inserted, the whole resembling the letter T; the edges of the bark, at the longitudinal incision in the stock, are raised half way around the stock with the spatula of the budding knife and the shield of bark pushed downward under the bark, being made to spread out well, so as to leave no hollow under the bud in ligaturing; it will be noticed on cuts 4, 5 and 6, that below and under the main bud is another little bud; it was placed there by nature to take the place of the bud proper, whenever anything happen to the latter, destroy-

PLATE I.

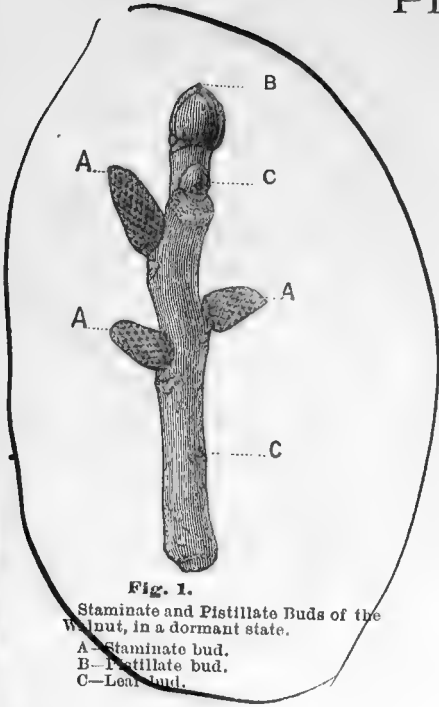


Fig. 1.
Staminate and Pistillate Buds of the
Walnut, in a dormant state.
A—Staminate bud.
B—Pistillate bud.
C—Leaf bud.

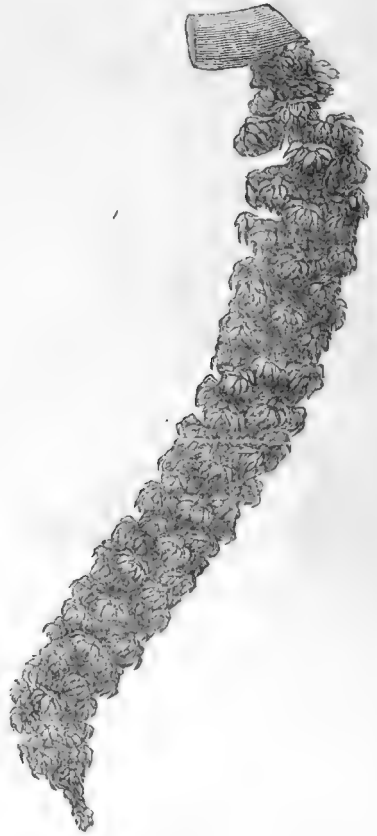


Fig. 2.
Staminate bud of the Walnut, or catkin,
in full bloom, or male blossoms.



Fig. 3.
Pistillate bud of the Walnut in full
bloom, or female blossoms.

Walnut Blossoms, of natural size and "from nature," as grown on *Second Generation*
Præparturiens trees, on Barren Hill, Nevada City, Cal.

(Copyrighted.)

ing its functions. In ligaturing, the bandage might be made to cover that little bud, though it should not be squeezed too hard, and to run tight enough above and under the big bud that should stick out of the bandage. To enable the winding around the bud of the bandage, the base of the leaf stalk, always very large with walnuts, has to be previously shaved off with a sharp knife, and while budding the knife should always be sharp, to permit to ligature the budding tight enough under as well as over the bud. The shaving off close to the bark of the cion of the base of the leaf stalk, will leave a mark resembling a clover leaf, as shown in figures 4, 5 and 6. The natural falling off of the leaf stalk in the fall, leaves on a similar mark. When budding walnut trees in midsummer or early fall with the trees fully in sap, the bandage should be loosened ten or fifteen days after insertion, and entirely removed another two weeks after; if the budding was done later on in the fall, then it would not be necessary to loosen the ligature and remove it so soon, though it would be well to watch. The cions furnishing the buds have to be pretty well in sap, and so the stock; with the walnut more particularly, this is a condition *sine qua non* of success.

Another very important point in budding the walnut, whether it be shield or ring budding, is to take the buds from the very base of the cion and where the wood is perfectly round and not a kind of angular-like, as it is the case with the upper portion of the cion, in fact, hardly more than two or three buds can be used from a cion whether one or three feet long, and that's what makes good buds, or buds fit to be used, so scarce. As cions of the proper size for walnut budding can hardly be had on bearing trees, the best and shortest way to procure some, is to cut off large limbs six to twelve inches from a fork; all around the stump will grow in the ensuing spring lots of shoots, three or four will be allowed to remain to furnish the number of buds needed. If having no large trees of the kind to bud, the best then is to procure three or four year old trees, set them out in rich, moist soil, and cut them back two inches above the ground, or two inches above the graft, if grafted trees, to make them grow shoots from which to get buds for budding purposes, which, let it be well remembered, cannot be got but at the base of the shoots, and only 2 to 3 buds per shoot, no matter how long the latter may be.

ANNULAR OR RING BUDDING.

This is the most successful mode of grafting the walnut. The operation is simple enough, though it has to be done with some care. Much of what has been said about shield budding applies with equal force to ring budding. First the stock or shoot to be budded must be at least $\frac{3}{4}$ inch thick, as large as that represented in fig. 5, larger yet the better. Every portion of the stock or shoot to be budded, is not fit to receive the ring of bark; the wood should be not only perfectly round and smooth, leaving on the liber no roughness whatever after the removing of the ring of bark, as shown in fig. 5, but the eyes should also be far enough apart (see fig. 5); if the budding, on that account, has to be done a little higher up, it does not matter much, not with the walnut at any rate. In performing ring budding, a ring of bark containing a bud, and at least $1\frac{1}{2}$ inches long, like in fig. 6, should be first taken from the base of the cion, and in the following manner: Two circular incisions are made, one above and the other below the bud, leaving the latter right in the center of the ring, and a longitudinal incision ran between the two circular ones back of the bud; then with the spatula or end of the budding knife, the edges of the bark at the longitudinal incision are loosened on each side, about half way round or $\frac{1}{4}$ inch from the bud; next, with a little twist of the thumb and forefinger, at the same time pressing gently down on the bark, to prevent the corculum getting out, or even being loosened up, the whole ring of bark is made to come off. Before inserting it on the stock, one of corresponding size is taken from the stock, in a long and smooth space between two buds, and in the following manner: The ring of bark from the cion with a bud on, is placed and spread out on the stock, and circular incisions made in the bark of the stock above and below the ring of bark, and a longitudinal incision ran between the two circular ones and the ring of bark removed from the stock, and that from the cion inverted in its place. Should the ring of bark from the cion be too small to run clear around the stock, a strip of bark should have to be left on the latter, leaving only a space big enough to admit the insertion of the ring of bark from the cion; if, on the contrary, it would be too wide, a strip should be taken out till it would fit exactly the space covered by the ring of bark just removed. The budding is then well ligatured with a soft strip of old cotton cloth, the bandage being made to wrap around covering all but the bud, and also above and under the circular incisions. The bandage should be loosened in the course of two weeks, the same as described with shield budding. As the taking off of such a large ring of bark weakens up much the stalk so budded, the top should be cut off to about two feet from the budding, to prevent accident. Sometimes the ring of bark from the cion goes only half way around on the stock; such budding should be more properly called "plate"

PLATE II.

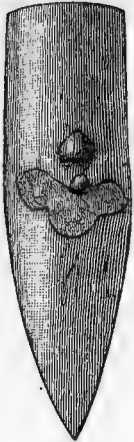


Fig. 4.
Walnut Shield—Budding.
Size of shield of bark to
be inserted.

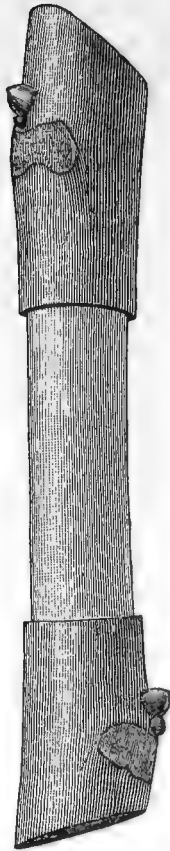


Fig. 5.
Walnut Ring—Budding.

Stock ready to receive the ring of bark,
as represented in Fig. 6.

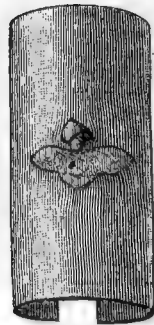


Fig. 6.
Walnut Ring—Budding.
Ring of bark to be inserted in
space as shown in Fig. 5.

SHIELD AND RING BUDDING OF THE WALNUT.

Shield and ring of bark, and stock, as represented in Figures 4, 6 and 5, all of natural size and "from nature," from a Mayette Walnut tree on Barren Hill, Nevada City, Cal.

(Copyrighted.)

than "annular" budding; the more around the ring of bark reaches the better. The ensuing spring, the stock is cut off, about an inch above the budding, and all shoots growing around the stump taken out except that from the bud proper. The cut should in every case be duly waxed. If the budding fails altogether, the stock is cut back below where the budding took place, and one of the new shoots budded in the same manner the ensuing fall.

This mode of budding the walnut is the most successful one of all, but it would be useless to try it on smaller wood than that represented in Fig. 5.

CLEFT SAP GRAFTING.

Common cleft grafting, with the cleft running through the center of the stock or limb to be grafted, does not succeed well on the walnut; but cleft "sap grafting" succeeds well enough if done at the right time, or early in the spring, when the sap is commencing to flow up. Through sap grafting the biggest limbs of a tree can very well be grafted; in fact, such grafting will succeed better on large limbs, say four to six inches in diameter, than on smaller ones, three inches and under. Our illustration (Fig. 7), which represents a section of a limb $3\frac{1}{2}$ inches thick, and taken from one of our trees, with the clefts marked as they should run through the stock, gives a fair idea of that mode of grafting. First the stock is sawed off, and the surface of the cut, especially that portion of it nearer the bark, smoothed up; a strong knife or small cleaver is then laid upon the side of the stock, as shown by lines AB in Fig. 7, which are forming the chord of a segment, and with a mallet driven down till the stock split deep enough to permit the inserting of the graft; a small wedge made of iron or hardwood being driven down in the center of the cleft to open it sufficiently to admit the cion, which has to be prepared as shown in Fig. 8—that is, with the base cut wedge-shaped, through a double scarf. But here is a very important point in preparing the cion: one scarf only should have the pith of the cion exposed; it does not matter precisely how thick it will leave the back of the inserted portion of the cion. Fig. 8 represents a cion of natural size already prepared, and shows plainly the pith exposed only on one of the scarfs. Two buds are allowed to remain on the cion—one at the upper end, as shown in Fig. 8; the other below it, just back of the scarfs. The top of the cion is cut off a quarter of an inch above the upper bud, slanting, as shown in the cut, and waxed after having been inserted. A stock of the size of that represented in Fig. 7 will admit four cions, but two are sufficient, considering, too, how difficult it is to procure good cions on a bearing tree; in that case they should be inserted both in A, or in B—that is, opposite each other. Should the stock be much larger, it should be split on three sides, and three cions at least inserted; more, if they can easily be had. In inserting the cion, one has to be very careful to make allowance for the thick bark of the stock, as shown by shaded circle around the stock in Fig. 7, and insert the cion right at the point in A and B marked by dotted line, and in such manner that the inner bark of the stock next the wood and that of the cion will be brought together and unite the whole length as much as possible; the wedge being removed, the two parts of the cleft will draw together and hold the cion in place. But to prevent the cleft to reopen through the influence of the atmosphere and sun, the stock is well ligatured with a strong strip of old cotton cloth, doubled up, but not before the whole surface of the cut, including the clefts and tops of cions, have been duly waxed. As the clefts are made to run outside of the heart of the tree or limb, right into the sap, hence the name of sap grafting given to that mode of cleft grafting. Through the summer sticks or stout poles have to be tied up to the stock or limbs, as the case may be, to tie up the successful grafts to them, for their growth, especially on large trees, is so rank that their own weight or the wind is liable to break them clear off down to the stock and ruin them; so it is well to be prepared for such an emergency. Now, should the grafts fail to grow, there would remain a fair chance to resort to ring budding through the summer or fall of the same year, for a number of shoots would grow around the stock, and if three or four only are permitted to remain, they will grow quite large through the summer and could very well be budded as described in this essay. Since to graft large trees into another kind by the ring-budding process requires the cutting back of the limbs at one foot from where they fork out, to allow them to grow new wood upon which to insert the buds, it would be just as well, then, to try first in the spring sap grafting; for, should the grafting fail, it would not put one to much trouble. We have had very large trees around Nevada City, some thirty years old, successfully grafted through sap grafting. Thus it is shown how easy it is to transform a very large walnut tree into a hardier or finer or more prolific kind. The next question is, what are—

THE BEST VARIETIES

to propagate by grafting? Undoubtedly, since the trouble and expense in grafting walnut trees is the same, whatever kind should be used in grafting, none but varieties known to

PLATE III.

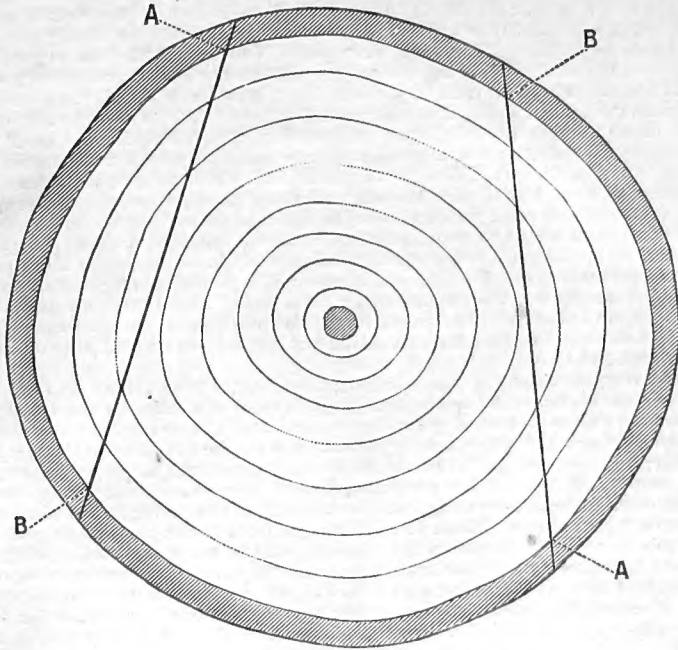


Fig. 7.—Cleft Sap-Grafting—section of stock.



Fig. 8.—Cion ready for insertion.

CLEFT SAP-GRAFTING OF THE WALNUT.—Section of stock and cion of natural size and from nature, from a *Præ-parturiens* Walnut tree.

(Copyrighted.)

be perfect bloomers, prolific ones, and bearing large and well shaped nuts, with a soft shell (but no paper-shell) and kernel of first quality with skin of light straw color, should be selected; and wherever late frosts in the spring are liable to injure or kill the blossoms, none but hardy and late kinds to be used. We do not hesitate in highly recommending such varieties as Mayette, Parisienne, Franquette, Vourey and Meylan, as much for their hardiness and lateness on budding out, as for the beauty and extraordinary size of the nuts. At the altitude of Nevada City these kinds put forth in May, and some do not bloom before the first of June, and mature their nuts well. We would refer our readers to walnut cuts in descriptive catalogue and also to the descriptions of each kind. For astonishing fertility and splendid quality of the nuts, we would recommend the Præparturiens, Cluster, Chaberte, Serotina, and others. We have *grafted* trees of Mayette, Franquette, Chaberte, Parisienne, Meylan and Vourey, and we would advise people desirous of transforming their unproductive or delicate trees into better sorts, to plant a few such trees from which to procure cions for budding and grafting purposes, never minding the high prices of these *grafted* trees, (and it cannot be helped if grafted walnuts have to be held up so high, so difficult and costly it is to graft young walnut trees) for we give the assurance, if not the guarantee, that all such trees have been grafted from the *original* stock, and that they carry along with them all the characteristics of the species, be it their lateness in budding and blooming out, or the beauty and size of the nuts, or great fertility of the kind.

After having obtained the right kind to graft with, the trees are set out in good ground, and cut back to two or three inches from the ground, if seedlings, or three to four inches from where they were grafted, if grafted trees, and about three to four shoots allowed to grow around the stock if a tree not bigger than the middle finger, more if a tree two inches in diameter; all those shoots but one to be used for budding purposes; the very smallest ones, big as a pencil, for grafting purposes; if more cions were desired the ensuing year, then the shoot that was left on the stock is cut back in the spring in the same manner.

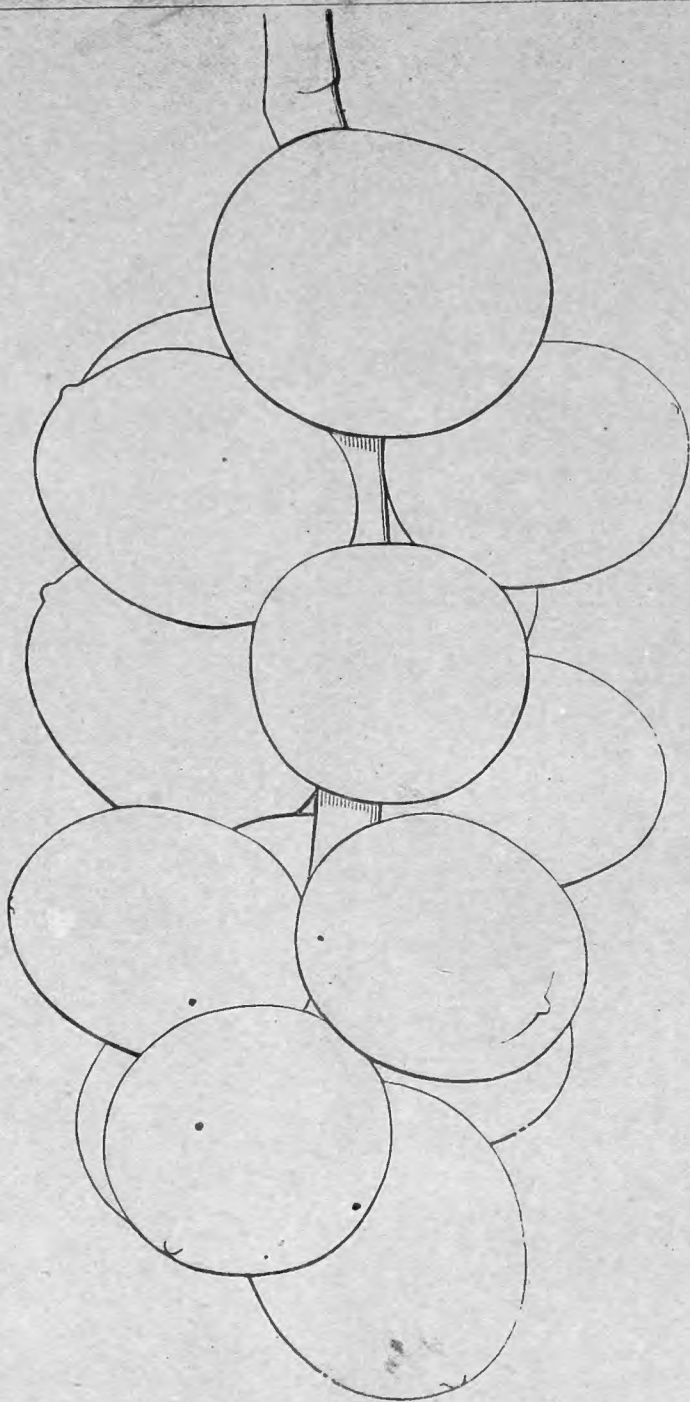
We have "grafted trees" from 12 to 36 inches, from which one or two grafts could be obtained the very spring following the planting of the trees, by cutting back the trees. We will add that the "grafted walnuts" that we offer were grafted *expressly* for us, regardless of cost, by the most reliable firm to be found in the walnut district in France, through a process discovered several years ago, and which we will briefly describe for the benefit of people who may be inclined to try this new method of grafting very young walnuts.

HOT-HOUSE GRAFTING.

One year old seedlings of the size of the little finger or about $\frac{1}{2}$ inch in diameter at the butt, are selected, the root cut back short enough to permit the planting of the trees in pots of three inches in depth; the trees previously to being potted are grafted with cions exactly of the same size, whip or cleft grafting being used; the pots are then taken to a hot or propagating-house and a glass bell set over them to prevent the outside air of getting to the grafts; the temperature of the house being kept day and night, at least for fifteen days, or till the grafting has taken, to 70° Fahrn. When the grafts are well taken and growing, the glass bells are removed, and the grafts allowed to grow three or four inches, before the little grafted trees are set out in nursery rows; it may be preferable, especially in certain parts of the country, to keep the trees in the pots till the ensuing spring; 40 to 50% of the grafts will succeed, and it is the best that can be done.

This mode of grafting the walnut, besides requiring a hot house, needs the care of a skillful person to make it succeed. So are grafted the little trees that we import from France, and that we plant in nursery rows and offer to the public, desirous of transforming any worthless, unproductive, or delicate kinds, into more valuable ones.

For more particulars on the varieties that we recommend for grafting purposes, and the prices of grafted and seedling trees, see the accompanying catalogue.



JUGLANS RACEMOSA, OR CLUSTER WALNUT.

Representing a cluster of 15 nuts, from original tree (natural size).

Our trees are grown from nuts borne on the very tree from which the above cluster was picked.